

USSR

RUBINOV, A. N.; ANUFRIK, S. S., Zhurnal Prikladnoy Spektroskopii: July, 1972;  
pp 33-7

It is shown that the static compensation of distortion accomplished by inserting a lens in the resonator of a liquid laser is less effective.

The article includes 1 table and 2 illustrations. There are 2 references.

2/2

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1/2 013 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--LIGAND EXCHANGE IN SOLUTIONS OF COPPER COMPLEXES AND ITS INFLUENCE  
ON EPR SPECTRA -U-  
AUTHOR-(02)-SHKLYAYEV, A.A., ANUFRIYENKO, V.F.  
CCOUNTRY OF INFO--USSR  
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(1), 107-10  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--EPR SPECTRUM, COPPER COMPLEX, LIGAND, ORGANIC SOLVENT,  
TEMPERATURE DEPENDENCE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3001/0032 STEP NO--UR/0020/70/191/001/0107/0110  
CIRC ACCESSION NO--AT0125872  
UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0125872

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SHAPE OF THE EPR SPECTRUM OF THE DIETHYLDITHIOCARBONATE COMPLEX OF CU AS A FUNCTION OF THE INTERACTION OF THE COMPLEX WITH LIGANDS PRESENT IN SOLN. WAS STUDIED. EPR SPECTRA WERE TAKEN IN PHME, C SUB5 H SUB5 N AND PHME 5PERCENT C SUB5 H SUB5 N AT 300DEGREESK. THE TEMP. DEPENDENCE WAS STUDIED AT MINUS 5, MINUS 40, AND 70DEGREES. EQUATIONS ARE DERIVED AND A METHOD IS PROPOSED FOR STUDYING EXCHANGE REACTIONS WITH FREQUENCIES 3 TO 4 TIMES GREATER THAN IN NMR SPECTROSCOPY. FACILITY: INST. KATAL., NOVOSIBIRSK, USSR.

UNCLASSIFIED

USSR

UDC: 536.5:621.383

Anufriev, A. A., Komissareva, L. M., Sakharov, V. P.

"Photoelectric Sensor for Recording of Low-power Infrared Radiation"

Moscow, Pribory i Sistemy Upravleniya, No 5, 1972, pp 48-49.

Abstract: The sensor described in this article was designed for recording weak light signals radiated by heated substances in an adiabatic compression chamber. The sensor consists of an optical aperture, light guide, interference light filter, modulator disc, photoresistor and standard signal source. The device can record signals taken from the photoresistor in the range of 2-20  $\mu\text{V}$  with a time constant of about  $10^{-5}$  sec, with linear accelerations up to 150 g and vibrations at 100-2000 Hz, and therefore can be used for a number of problems where the properties of a gas and control of a process in the gas involve the radiation of light energy.

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EQUIPMENT  
Aeronautical

USSR

UDC 533.697.3

ANUFRIEV, V. M., KOZLOV, G. I., and ROYTENBURG, D. I., (Moscow)

"Investigation of Diffusors Characteristics in Aerodynamic Shock Tube"

Moscow, Izvestiya Akademii Nauk SSSR, Mekhanika Zhidkosti i Gaza, No 1, Jan-Feb 72, pp 156-161

Abstract: An experimental investigation of diffusors performance (start-up) at  $M=8$  and variable Reynolds number corresponding to transitional as well as laminar flow in the boundary layer, in an aerodynamic shock tube is reported, and which is an extension of the authors previous investigation. The experimental setup and techniques are described. Hydrogen at 115 atm was used as a driving gas, while nitrogen at 4 atm as a working gas. Velocity of incident shock wave propagation, pressure behind a reflected shock wave at the nozzle inlet, as well as pressure at various points of tested diffusors were measured during tests. Moreover, the time of working gas passage through the nozzle was determined. Models of frontal diffusors with central body and relative throat area  $F_n = 0.12, 0.16, 0.21$ , are tested and their operation

analyzed. A method for determining the total pressure recovery coefficient in a diffuser under condition of a shock tube is outlined. An analysis of the

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USSR

UDC 681.3.06:51

GLUSHKOV, V. M., KOSTYRKO, V. F., LETICHEVSKIY, A. A., ANUFRIYEV, F. V.,  
SEL'DEROV, Z. M.

"A Language for Recording Formal Theories"

Teor. Kibernetiki. vyp. 3 [Theory of Cybernetics, No 3 -- Collection of Works],  
Kiev, 1970, pp 4-31, (Translated from Referativnyy Zhurnal, Kibernetika, No 6,  
1971, Abstract No 6 V591 by V. Mikheyev).

Translation: A version is suggested of the first portion of a formal language, YaP for recording of mathematical theorems and their proofs -- language YaT for recording of formal theories. It is noted that the second portion of the YaP language -- language YaA for recording of algorithms for transformation of numerical and non-numerical information -- will be presented in a later article. YaT includes means taken from the language of narrow predicate calculus with equalities and functional variables, a language of expanded calculus, the language of set theory, as well as certain special devices. The syntax of the language, structure of the formalized mathematical text, symbols representing subjects, objects and structural functions are described in detail. The rules for usage of language YaT are presented.

1/2 011 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--NEW SPECIES OF LEAFHOPPERS OF THE TRIBE OPSIINI, HOMOPTERA  
CICADELLIDAE, FROM EAST ASIA -U-  
AUTHOR--ANUFRIYEV, G.A.  
COUNTRY OF INFO--USSR  
SOURCE--ZOO ZH 49(1): 151-153. ILLUS. 1970  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--INSECTA, PLANT PARASITE, GEOGRAPHIC LOCATION, ANATOMY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3006/0758 STEP NO--UR/0439/10/049/001/0151/0153  
CIRC ACCESSION NO--AP0134401

2/2 011

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0134491

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HISHIMONDIDES CHINENSIS FROM CHINA AND NORVA JAPONICA FROM JAPAN ARE DESCRIBED AND COMPARED WITH THE CLOSELY RELATED ONES. FIGURES OF MALE GENITALIA OF THESE SPECIES AS WELL AS OF N. ANUFRIEVI EM. ARE GIVEN. FACILITY: GURKI STATE UNIV., GURKI, USSR.

UNCLASSIFIED



USSR

UDC 538.2

BURAVIKHIN, V. A., KARASOV, P. I., KAZAKOV, V. G., and ANUFRIYEV, V. S.,  
Irkutsk Pedagogical Institute

"Effect of Stresses on Pulsed Remagnetization of Thin Nickel-Iron Films"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 31, No 4, Apr 71, pp 739-744

Abstract: The effect of elastic stresses on the remagnetization time ( $\tau$ ), the switching factor, and the change in character of pulsed remagnetization processes was experimentally investigated by a method in which the stress intensity could be varied continuously. The remagnetization was carried out on 20% Fe-80% Ni films  $\sim 1500 \text{ \AA}$  thick by a constant amplitude value of the remagnetizing impulse ( $H_S$ ) and various strain values ( $\epsilon$ ). The results are analyzed by reference to oscillograms of the longitudinal signal of remagnetization, the domain structure of the investigated film, and diagrams showing effects of stresses and  $1/\tau$  dependences on  $H_S$  at various  $\epsilon$ . Six figures, seven bibliographic references.

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USSR

UDC: 620.171.32

TRAPEZNIKOV, D. A., ANUFRIYEV, Yu. P., KOCHETOV, D. V., LAUKHINA, N. S.,  
URSIN, V. A., Moscow

"Evaluating the Thermal Stability of Graphites Over a Broad Temperature  
Range"

Kiev, Problemy Prochnosti, No 9, Sep 72, pp 18-21

Abstract: Experimental studies are conducted as a basis for analyzing the heat-stressed and limiting states of graphite construction elements and plotting their thermal resistance as a function of temperature. Five grades of graphite were tested: VPP, VPP-1000, MPG-8, ARV and PROC-2400. Annular specimens were subjected to a load consisting of a steady-state radial heat flux. The temperature was recorded at four points along the radius of the specimen at the time of fracture, and diametric displacements were determined. These figures were then used to calculate the temperature distribution through a cross section of the specimen, as well as tangential strain on the outer surface. The thermal stability of the graphite materials was calculated by determining the temperature differential as a function of surface temperature at the beginning of fracture. An expression is given which approximates the

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USSR

TRAPEZNIKOV, D. A. et al., Problemy Prochnosti, No 9, Sep 72, pp 18-21

deformed state of the rings within 10%. It is found that the temperature differential and heat flux at fracture are complicated functions of temperature, and that these functions are determined by temperature changes in the principal characteristics of the graphite materials -- maximum tensile deformation, coefficient of thermal expansion, modulus of elasticity and thermal conductivity.

2/2

Graphite

USSR

UDC 666.764.4.020.17

URSIN, V. A., ANUFRIYEV, YU. P., PETUKHOVA, I. A., and LAUKHINA, N. S.

"On the Evaluation of the Strength of Graphite Materials"

Moscow, Zavodskaya Laboratoriya, Vol 38, No 12, 1972, pp 1518-1519

Abstract: Regression functions were used to determine effective coefficients of stress concentration  $\alpha_c$  in graphites for which a correlation relationship between strength and density exists and the correlation coefficients are in the 0.5-0.9 limits. By applying this correlation relationship, the error in determining  $\alpha_c$  could be reduced by more a factor of two in comparison with usual methods, where for  $\alpha_c$  is taken the relation of arithmetic mean values. The material strength depends on a series of technological factors, whereas  $\alpha_c$ -values are determined by the graining of the material. One figure, three formulas, three tables, five bibliographic references.

USSR

UDC 661.666.620.17

FRIDMAN, A. M., BARADANOV, V. N., ANUPRIYEV, YU. P., and STROKOV, V. I.

"Some Features of the Methodology of Investigating the Strength Properties of Graphites Under Plane Stress Conditions"

Moscow, Zavodskaya Laboratoriya, Vol 38, No 9, 1972, pp 1137-1140

Abstract: A device developed for the investigation of short-term strength properties of tubular specimens of graphite at normal temperatures and in all four quadrants of the coordinate system is described. Strength properties at tension and compression of two graphite brands, VFP and LLC-6, are tabulated and their strength dependence on the wall thickness of specimens is illustrated. Four figures, one table, eight bibliographic references.

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USSR

UDC 620.171.32

URSIN, V. A., TRAPEZNIKOV, D. A., KOCHETOV, D. V., and ANUFRIYEV, Yu. P.,  
Moscow

"Concentration of Thermal and Mechanical Stresses in Graphites"

Kiev, Problemy Prochnostic, No 8, Aug 71, pp 64-66

Abstract: Concentrations of thermal and mechanical stresses near peripheral incisions were experimentally investigated on ring-shaped specimens (outside diameter 60 mm, internal diameter 22 mm, height 15 mm) of ARV, ARVU, VPR and PROG-2400 graphites. The inner ring surface was heated uniformly by radiation and the outer surface was cooled by the contact method. The stress concentration coefficients and sensitivity indices were analyzed by reference to tabulated data and diagrams. It is demonstrated that thermal and mechanical stress concentrations are of one and the same character. The sensitivity of the investigated graphites to incisions was found to be proportional to the radius of curvature in the top of the incision and inversely proportional to the graphite graining. Two illustrations, four formulas, four tables, four bibliographic references.

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Graphite

USSR

UDC 620.171.32

TRAPEZNIKOV, D. A., URSIN, V. A., KOCHETOV, D. V., and ANUFRIYEV, Yu. P.,  
Moscow

"Investigation of Destruction Conditions of Graphites in Heat Treating  
Furnaces"

Kiev, Problemy Prochnosti, No 12, Dec 72, pp 68-71

Abstract: The destruction conditions by thermal stresses of two practically isotropic ring-shaped specimens of graphites ARV<sub>NTU</sub> ( $\rho = 1.64 \text{ g/cm}^3$ ) and ARV<sub>STU</sub> ( $\rho = 1.51 \text{ g/cm}^3$ ) of small-grained structure and uniformly distributed porosity were experimentally investigated on a described device. The types of observed destructions and their character are discussed by reference to pictures, schemata, and diagrams of the temperature gradient, relative deformation, and tangential and axial surface stresses. The possibility of using numerical calculation methods of the stress-deformed condition of ring-shaped graphite specimens by thermal loads is demonstrated. Seven illustrations, one table, three bibliographic references.

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1/2 027

UNCLASSIFIED

PROCESSING DATE--27NOV70

TITLE--METHODS FOR MEASURING THE THERMAL CONDUCTIVITY OF GRAPHITES -U-

AUTHOR--(04)-LUTKOV, A.I., VOLGA, V.I., DYMOV, B.K., ANUFRIYEV, YU.P.

COUNTRY OF INFO--USSR

SOURCE--ZAVOD. LAB. 1970, 36(3), 295-8

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--GRAPHITE, THERMAL CONDUCTIVITY, MATERIAL TEST

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--2000/2138

STEP NO--UR/0032/70/036/003/0295/0298

CIRC ACCESSION NO--AP0125721

UNCLASSIFIED



2/2 027

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0125721

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CONCORDANT RESULTS WERE OBTAINED BY MEASURING THE THERMAL COND. OF GRAPHITES USED IN CONSTRUCTION BY MEANS OF THE FOLLOWING METHODS: (1) AXIAL HEAT FLUX, (2) COMPARATIVE, (3) KOHLRAUSCH (1900), (4) POWELL AND SCHOFIELD (CA 33: 3649 PRIME5), AND (5) RADIAL HEAT FLUX WITH INDIRECT HEATING. THE THERMAL COND. PASSES THROUGH A MAX. IN THE 50-350DEGREEK INTERVAL. EXPTL. DETAILS GIVEN.

UNCLASSIFIED

USSR

UDC 669.295.472

GOPIYENKO, V. G., ANUFRIYEVA, N. I.

"Studies on the Development of a Technology for Electrolytic Refining of Titanium in Fused Media"

Tr. Vses. N-i. i Proyechn. In-ta. Alyumin., Magn. i Elektrodn. Prom-sti [Works of All-Union Scientific Research and Planning Institute of the Aluminum, Magnesium and Electrode Industry], 1970, No. 72, pp. 215-226. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 G223 by the authors).

Translation: The basic results of investigations performed at the All-Union Aluminum and Magnesium Institute in 1955-1968 for the development of a technology for electrolytic refining of Ti in fused media are presented. A technology of refining the wastes of unalloyed Ti producing large crystalline and powdered Ti of high purity has been developed and tested on pilot scale. The technology of refining of alloy wastes produces crystalline alloy Ti. 2 tables.

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USSR

UDC 669.295.48

ANUFRIYEVA, N. I., BALASHOVA, Z. N.

"Electrolytic Refining of Titanium Alloy Wastes Containing Aluminum and Manganese"

Tr. Vses. N-i. i Proyechn. In-ta. Alyumin., Magn. i Elektrodn. Prom-sti [Works of All-Union Scientific Research and Planning Institute of the Aluminum, Magnesium and Electrode Indus-ry], 1970, No. 72, pp. 227-236. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 G226 by the authors).

Translation: Studies were performed on the electric refining of wastes of Ti alloys such as OT4. Chips of OT4 alloy, mixtures of chips of OT4 and VT1 alloy, as well as chunks of OT4-1 alloy were refined. Investigation of the influence of the degree of filling of containers, the production of anode material, and the number of fillings of containers on cathode metal grain size were performed. The possibility was demonstrated of refining chunk wastes of OT4-1 alloy. A distribution of the basic components in OT4 and OT4-1 alloys in the refining products is presented. 5 figs; 4 tables.

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USSR

UDC 8.74

KANEVSKIY, V. B., ANUFRIYEVA, O. A.

"Finding the Set of All Paths Between City Telephone Exchange Stations of Complex Structure"

V sb. Avtomati i upr. (Automata and Control--collection of works), Moscow, Nauka, 1972, pp 114-122 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V508)

Translation: A study is made of the method of constructing an entire set of combinations of  $p$  elements of  $q$  each on the basis of which it turns out to be possible to create a computer algorithm for finding all paths between municipal telephone exchange stations of complex structure.

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USSR

UDC 911.3:616.9:576.895.771(47+57)

SHIPITSINA, N. K., ANUFRIYEVA, V. N., BANDIN, A. I., VINOGRADSKAYA, O. N.,  
GORNOSTAYEVA, R. M., KUPRIYANOVA, Y. S., MARKOVICH, N. Ya., RASNITSYN, S. P.,  
and TIMOFEYEVA, L. V.

"Study of the Biology of Blood-Sucking Diptera as Basis for Combating  
Vectors of Infection and Blood-Sucking Insects in the Soviet Union"

V sb. Materialy Nauchn. konferentsii posvyashch. 50-letiyu In-ta Med.  
parazitol. i tropich. Med. 1970 (Proceedings of the Scientific Conference  
Devoted to the 50th Anniversary of the Institute of Medical Parasitology  
and Tropical Medicine 1970 -- collection of works), Moscow, 1970, pp 46-49  
(from RZh-Meditsinskaya Geografiya, No 2, Feb 71, Abstract No 2.36.48)

[No abstract]

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ANUFRIYEVA, Ye.V.

*Polyporus*

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2009-2010 40516

Journal of the American Academy of Religion, 47 (1979), 1-14.  
 1980. *Journal of the American Academy of Religion*, 48 (1980), 1-14.  
 1981. *Journal of the American Academy of Religion*, 49 (1981), 1-14.  
 1982. *Journal of the American Academy of Religion*, 50 (1982), 1-14.  
 1983. *Journal of the American Academy of Religion*, 51 (1983), 1-14.  
 1984. *Journal of the American Academy of Religion*, 52 (1984), 1-14.  
 1985. *Journal of the American Academy of Religion*, 53 (1985), 1-14.  
 1986. *Journal of the American Academy of Religion*, 54 (1986), 1-14.  
 1987. *Journal of the American Academy of Religion*, 55 (1987), 1-14.  
 1988. *Journal of the American Academy of Religion*, 56 (1988), 1-14.  
 1989. *Journal of the American Academy of Religion*, 57 (1989), 1-14.  
 1990. *Journal of the American Academy of Religion*, 58 (1990), 1-14.  
 1991. *Journal of the American Academy of Religion*, 59 (1991), 1-14.  
 1992. *Journal of the American Academy of Religion*, 60 (1992), 1-14.  
 1993. *Journal of the American Academy of Religion*, 61 (1993), 1-14.  
 1994. *Journal of the American Academy of Religion*, 62 (1994), 1-14.  
 1995. *Journal of the American Academy of Religion*, 63 (1995), 1-14.  
 1996. *Journal of the American Academy of Religion*, 64 (1996), 1-14.  
 1997. *Journal of the American Academy of Religion*, 65 (1997), 1-14.  
 1998. *Journal of the American Academy of Religion*, 66 (1998), 1-14.  
 1999. *Journal of the American Academy of Religion*, 67 (1999), 1-14.  
 2000. *Journal of the American Academy of Religion*, 68 (2000), 1-14.  
 2001. *Journal of the American Academy of Religion*, 69 (2001), 1-14.  
 2002. *Journal of the American Academy of Religion*, 70 (2002), 1-14.  
 2003. *Journal of the American Academy of Religion*, 71 (2003), 1-14.  
 2004. *Journal of the American Academy of Religion*, 72 (2004), 1-14.  
 2005. *Journal of the American Academy of Religion*, 73 (2005), 1-14.  
 2006. *Journal of the American Academy of Religion*, 74 (2006), 1-14.  
 2007. *Journal of the American Academy of Religion*, 75 (2007), 1-14.  
 2008. *Journal of the American Academy of Religion*, 76 (2008), 1-14.  
 2009. *Journal of the American Academy of Religion*, 77 (2009), 1-14.  
 2010. *Journal of the American Academy of Religion*, 78 (2010), 1-14.  
 2011. *Journal of the American Academy of Religion*, 79 (2011), 1-14.  
 2012. *Journal of the American Academy of Religion*, 80 (2012), 1-14.  
 2013. *Journal of the American Academy of Religion*, 81 (2013), 1-14.  
 2014. *Journal of the American Academy of Religion*, 82 (2014), 1-14.  
 2015. *Journal of the American Academy of Religion*, 83 (2015), 1-14.  
 2016. *Journal of the American Academy of Religion*, 84 (2016), 1-14.  
 2017. *Journal of the American Academy of Religion*, 85 (2017), 1-14.  
 2018. *Journal of the American Academy of Religion*, 86 (2018), 1-14.  
 2019. *Journal of the American Academy of Religion*, 87 (2019), 1-14.  
 2020. *Journal of the American Academy of Religion*, 88 (2020), 1-14.

Abstracted investigations of certain sections of the problem of the formation of the liquid crystal phase in compounds with a complex molecular structure, in particular, in polyfunctional compounds with pendant flexible chains, is reported. The results of the study of the interaction of the liquid crystal phase with various external electrochemical forces between the molecular structure and the liquid crystal phase, and the influence of the liquid crystal phase on the properties of the compounds, are described. The interaction between the liquid crystal phase and the compounds is discussed in connection with the formation of the liquid crystal phase and of solving the corresponding boundary problems in the theory of the liquid crystal phase. The results of the study of the regular (isotropic) symposium on the properties of the liquid crystal phase in the Institute of Petrochemical Synthesis of the USSR are also presented. The results of the study of the properties of the liquid crystal phase in the USSR are also presented. The results of the study of the properties of the liquid crystal phase in the USSR are also presented.

The symposium was opened with the addresses of the  
of N. A. Andrianov and A. Yu. Izhmanskii, who emphasized the

of the polymer in the solid state. The results of these studies have been summarized in a review article by the author in the *Journal of Polymer Science*, Part A, Vol. 1, No. 1, 1963. The author has also published a book on the subject of "The Structure of Polymers in the Solid State" (Interscience, New York, 1964). The author has also published a book on the subject of "The Structure of Polymers in the Solid State" (Interscience, New York, 1964). The author has also published a book on the subject of "The Structure of Polymers in the Solid State" (Interscience, New York, 1964).

The reports of the author and others were directed to the study of the structure of polymers in the solid state. The author has also published a book on the subject of "The Structure of Polymers in the Solid State" (Interscience, New York, 1964). The author has also published a book on the subject of "The Structure of Polymers in the Solid State" (Interscience, New York, 1964). The author has also published a book on the subject of "The Structure of Polymers in the Solid State" (Interscience, New York, 1964).

In a number of reports the structure of these polymers and the influence of the structure of the system on its properties have been discussed. Thus, A. A. Frenkel discussed the structure of the crystalline phase of polymers in the solid state. The author has also published a book on the subject of "The Structure of Polymers in the Solid State" (Interscience, New York, 1964). The author has also published a book on the subject of "The Structure of Polymers in the Solid State" (Interscience, New York, 1964). The author has also published a book on the subject of "The Structure of Polymers in the Solid State" (Interscience, New York, 1964).

Also related to problems of polymer physics was the report of A. A. Frenkel (Poland), who told about new results obtained by him in the theory of polymeric lattices. 2. II.

Graphite

USSR

UDC: 620.171.32

URSIN, V. A., ANUFRIYEV, Yu. P., KHOMYAKOV, E. P., Moscow

"Study of the Influence of Stress Concentration on Variation of Strength Characteristics of Graphites"

Kiev, Problemy Prechnosti, No 7, Jul 73, pp 106-107.

Abstract: A method and results are described from an experimental investigation of the influence of stress concentrators on the strength of graphite materials during heating. The variation factors of strength are calculated. These factors are included in the formula for reliability of the structures. The influence of stress concentrators on reliability of structural elements of heterogeneous graphite materials subjected to forces and heat is studied. VPP and ARV graphites were used in the study.

1/1



USSR

USS 626.193.12

BYALOBENKIN, A. V., and ANURON, G. M., Academy of Sciences  
USSR, Institute of Analytical Chemistry

"Specifics of corrosion of Metals in Distilled Water at 250°C"

Moscow, Zashchita Metallor, Vol 7, No 1, Mar-Apr, 1971, pp 110-117.

Abstract: Results are presented of a study of the regularities of the initial stage of the process of corrosion of various metals in distilled water at 250°C. Chromium, molybdenum, tungsten, and heavy structural steels are shown to give the corrosion products of oxides, tungsten, molybdenum, chromium, and iron. Molybdenum, nickel, cobalt, and titanium, chromium, aluminum, and iron are shown to give the products of initial stages of corrosion. Some of the initial corrosion products are shown to be soluble in distilled water at 250°C. [100] The rate of corrosion is shown to be a function of the quantity of the initial stage of corrosion. In the case of the corrosion of chromium, molybdenum, and tungsten was not shown. The corrosion process was shown to be a function of the quantity of the initial stage of corrosion. The quantity of the initial stage of corrosion was shown to be a function of the quantity of the initial stage of corrosion. The quantity of the initial stage of corrosion was shown to be a function of the quantity of the initial stage of corrosion.

UDC 620.193.52

USSR

BYALOBZHESKIY, A. V., and ANUROVA, G. M., Academy of Sciences  
USSR, Institute of Physical Chemistry  
"Specifics of Corrosion of Metals in Distilled Water at 250°"

Moscow, Zashchita Metallov, Vol 7, No 2, Mar-Apr, 1971, pp 112-117.

Abstract: Results are presented of a study of the regularities of the initial stage of the process of corrosion of various metals in distilled water at 250°C. Chromatographic, gravimetric, and x-ray structural methods are used to study the corrosion behavior of aluminum, tungsten, cadmium, copper, molybdenum, nickel, niobium, platinum, tantalum, titanium, chromium, zirconium, type EI-929 heat-resistant nickel alloy, and type Kh18N10T steel. None of the metals tested were inert under the experimental conditions (exposure to distilled water at 250° [150° for aluminum due to its high rate of corrosion] for five hours), a slight quantity of hydrogen being almost always liberated. In most cases the share of corrosion with liberation of hydrogen was not great (1-3%). The main corrosion process apparently is the formation of an oxide or hydroxide film, which is then broken down by the electrolyte. Formulas are suggested for calculation of the quantity of metal dissolved and the quantity of metal remaining in the oxide film on the surface of the metal if the quantity of absorbed hydrogen and composition of the film are known.

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USSR

UDC 620.193.52

BYALOBZHESKIY, A. V., PLAVNIK, G. M., ANUROVA, G. M., and  
FEDOROVA, G. M., Academy of Sciences USSR, Institute of Physical  
Chemistry

"Composition of Films Formed on Metals in Distilled Water at 250°"

Moscow, Zashchita Metalloy, Vol 7, No 2, Mar-Apr, 1971, pp 177-178.

Abstract: The authors performed x-ray phase analysis of the films formed on copper, cadmium, tungsten, molybdenum, niobium, zirconium, titanium, nickel, and iron in distilled water at 250°. The films formed on each of these types of metals are described.

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Acc. Nr.: AP0050234

Ref. Code: US0000

PRIMARY SOURCE: FBIS Daily Report, Soviet Union, 16 March 1970, Vol III,  
Nr 51, p D 1

USSR

ATMOSPHERIC PROBE REACHES RECORD ALTITUDE

Moscow Domestic Service in Russian 1900 GMT 15 Mar 70 L

[Text] "Weather kitchen" is what they call a polar station in Taymyriya on the northernmost point of our land, Cape Chayuskin. This year has been declared here "The Year of the Quiet Sun." All observations in connection with this study are conducted according to the international program of the geophysical year.

Today, Sunday, was marked by something new for the polar workers: the probe launched by engineer-aerologist, (Yuriy Amushin), who is studying the upper layers of the atmosphere, today reached an altitude of 48,000 meters and has sent back interesting data about space at that height. No other aerologist in the world has yet achieved such a record.

Reel/Frame  
19810151

USSR

UDC: (21.371:512.510.535

ORLOV, Yu. I., ANYUTIN, A. P.

"Propagation of Radio Waves in the Spherical Ionosphere With Horizontal Gradients"

Tr. Mosk. energ. in-ta (works of Moscow Power Engineering Institute), 1972, vyp. 119, pp 92-103 (from RZh-Radiotekhnika, No 12, Dec 72, abstract No 12A278 by H. S.)

Translation: A model is proposed for a two-dimensionally inhomogeneous ionospheric layer which can be used for solution of the formulated problem. By using this model, expressions are derived for the principal parameters of a beam trajectory -- the skip range, and the phase and group path within the limits of a single skip. These results are applied to the case of a quasiparabolic model of the ionosphere with quasilinear variation of the electron concentration in the horizontal direction. Four illustrations, bibliography of seven titles.

1/1

USSR

UDC 621.396.677.31

ANYUTIN, A. P., PERMYAKOV, V. A., POLISHCHUK, V. K.

"Radiation Characteristics of Aperture Antennas in a Planar Stratified Medium"

Tr. Mosk. energ. in-ta (Works of the Moscow Power Engineering Institute), 1972, vyp. 100, pp 27-31 (from RZh-Radiotekhnika, No 7, Jul 72, Abstract No 7B37)

Translation: Formulas are derived for calculating the radiation pattern of a circular wave guide located in an infinite metal plane under a dielectric layer and a layer of plasma. Results are presented from the calculations for the cases of absence of a plasma and in the presence of a plasma with  $\epsilon$  varying linearly or quadratically. It is demonstrated that the presence of the plasma layer leads to a sharp decrease in radiation level in the fields of slip observation angles. The radiation pattern must depend on the laws of variation of the  $\epsilon$ -plasma.

1/1

USSR

UDC 576.858.25.033.35.095.333.098.396.332

ZHDANOV, V. M., BOGOMOLOVA, N. N., GAVRILOV, V. I., and ANZELAPARIDZE, O. G.,  
Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR,  
and Institute of Viral Preparations, Ministry of Public Health USSR, Moscow

"Chronic Infection of Cell Cultures by Tick-Borne Encephalitis Virus:  
Description of Ribonucleic Acid

Moscow, Voprosy Virusologii, No 1, 1973, pp 23-27

Abstract: Viral RNA produced in SPEV cells (acute infection) and HEp-2-Sof cells (latent infection) infected by tick-borne encephalitis virus was compared. Viral RNA of both culture types was identical with sedimentation constants ranging from 16S to 26S 1 hour after infection (peak at 20-22S) and 45S 5 hours after infection. The 16S-26S RNA, which was partially resistant to RNA-ase, is considered to be an intermediate form, while the 45S RNA was incorporated into ribonucleoprotein structures. Comparison with data on Venezuelan equine encephalitis virus showed that the studied virus is somewhat larger, with a molecular weight of about 3.2 million daltons.

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1/2 011 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--GENERAL CHARACTERISTICS OF PI PRIME NEGATIVE NUCLEON INTERACTIONS  
AT 60 GEV-C OBTAINED IN NUCLEAR EMULSION -U-  
AUTHOR--ANZON, E.V. *A*  
COUNTRY OF INFO--USSR  
SOURCE--PHYS. LETT. B 1970, 31 (4), 237-40  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--PION PROTON INTERACTION, NUCLEAR EMULSION, SECONDARY EMISSION,  
MULTIPLE SCATTERING  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REL/FRAME--1992/0001 STEP NO--NE/000007/07/05170.4/00077-1-0  
CIRC ACCESSION NO--AP0111255  
UNCLASSIFIED



2/2 011 UNCLASSIFIED PROCESSING DATE--1600170  
CIRC ACCESSION NO--AP0111255  
ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE INTERACTIONS OF 60 GEV-O PI  
PRIME NEGATIVE WITH THE N OF THE NUCLEAR EMULSION ARE DESCRIBED. THE  
AV. PRONG NO. IN THE PI PRIME NEGATIVE-P COLLISIONS IS 6.44 PLUS OR  
MINUS 0.16. THE MAJORITY OF SECONDARY PARTICLES IS EMITTED INTO THE  
FORWARD HEMISPHERE IN THE PI PRIME NEGATIVE P CENTER OF MASS SYSTEM,  
ESP. IN LOW MULTIPLICITY EVENTS. FACILITY: NUCL. PHYS. INST.,  
ALMA-ALT, USSR.

UNCLASSIFIED

1/2 006 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--GENERAL CHARACTERISTICS OF PI PRIME NEGATIVE NUCLEON INTERACTIONS  
AT 60 GEV-C OBTAINED IN NUCLEAR EMULSION -U-  
AUTHOR-(03)-ANZON, E.V., CHASNIKOV, I.YA., SHAKHOVA, TS.I.  
COUNTRY OF INFO--USSR  
SOURCE--PHYS. LETT.; 31B: 237-40(16 FEB 1970)  
DATE PUBLISHED--16FEB70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--PION, NUCLEON INTERACTION, NUCLEAR EMULSION, PARTICLE  
PRODUCTION, MESON INTERACTION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1982/0679 STEP NO--NE/0000/70/031/000/0237/0240  
CIRC ACCESSION NO--AP0052138  
UNCLASSIFIED

2/2 006

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0052138

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INTERACTIONS OF 60 GEV-C PI PRIME  
NEGATIVE MESONS WITH NUCLEONS OF THE NUCLEAR EMULSION WERE STUDIED.  
AVERAGE PRONG NUMBER IN PI PRIME NEGATIVE PROTON COLLISIONS IS 6.64 PLUS  
OR MINUS 0.16. THE MAJORITY OF SECONDARY PARTICLES ARE EMITTED INTO THE  
FORWARD HEMISPHERE IN THE PI PRIME NEGATIVE PROTON CM SYSTEM ESPECIALLY  
IN LOW MULTIPLICITY EVENTS. FACILITY: INST. OF NUCLEAR PHYSICS,  
ALMA-ATA, USSR.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--COHERENT PRODUCTION OF PARTICLES BY 60 GEV-C PIONS ON EMULSION  
NUCLEI -U-  
AUTHOR--ANZON, E.V. *A*  
COUNTRY OF INFO--USSR  
SOURCE--PHYS. LETT. B 1970, 31(4), 241-5  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--PHYSICS  
  
TOPIC TAGS--PARTICLE TRACK, PARTICLE PRODUCTION, NUCLEAR EMULSION, PION  
SCATTERING, ANGULAR DISTRIBUTION, COHERENT SCATTERING  
  
CONTROL MARKING--NO RESTRICTIONS  
  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1992/0059 STEP NO--NE/0000/70/031/004/0241/0245  
  
CIRC ACCESSION NO--AP0111253  
UNCLASSIFIED

2/2 010 UNCLASSIFIED PROCESSING DATE--23OCT70  
CIRC ACCESSION NO--AP0111253  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SOME PECULIARITIES IN THE PRONG  
NO. DISTRIBUTION AND THE ANGULAR DISTRIBUTION OF SECONDARIES WERE OBSD.  
IN INTERACTIONS OF 60 GEV-C PI PRIME POSITIVE IN NUCLEAR EMULSIONS, E.  
G. THE PRONG NO. DISTRIBUTION OF PI PRIME NEGATIVE-N INTERACTIONS (WITH  
SMALLER THAN OR EQUAL TO 1 NONRELATIVISTIC PARTICLE EMITTED INTO THE  
FORWARD LAB. HEMISPHERE) SHOWED AN OVERABUNDANCE OF 3 PRONG STARS. THIS  
OVERABUNDANCE APPEARED ONLY IN THE PRONG NO. DISTRIBUTION OF THE CLEAN  
EVENTS, I.E. INTERACTIONS IN WHICH THERE WAS NEITHER A VISIBLE RECOIL P,  
NOR A RECOIL NUCLEUS, NOR AN ACCOMPANYING E PRIME NEGATIVE, AS WOULD BE  
EXPECTED FOR COHERENT EVENTS. THE PECULIARITIES ARE INTERPRETED IN  
TERMS OF THE COHERENT PRODUCTION OF 3 AND 5 PI ON EMULSION NUCLEI. THE  
NORMALIZED CROSS SECTION FOR THE COHERENT REACTIONS PI PRIME NEGATIVE  
YIELDS 3 PI PRIMEPLUS OR MINUS, AND PI PRIME NEGATIVE YIELDS 5 PI  
PRIMEPLUS OR MINUS INCREASES WITH INCREASE OF PRIMARY ENERGY.  
FACILITY: NUCL. PHYS. INST., ALMA ATA, USSR.

UNCLASSIFIED

USSR

ANZON, Z. V., et al, Institute of Nuclear Physics, Academy of Sciences, Kazakh SSR, Alma-Ata; BOZOKI, G., et al, Central Research Institute of Physics, Budapest; DALKHAZHAY, N., et al, High-Energy Laboratory, Joint Institute of Nuclear Research, Dubna; BABETSKIY, Ya., et al, Laboratory of High-Energy Physics, Institute of Nuclear Research, Krakow; ZHDANOV, G. B., et al, Physics Institute imeni P. M. Lebedev of the Academy of Sciences, USSR, Moscow; ALEKSEYEVA, K. I., Scientific Research Institute of Nuclear Physics, Moscow State University, Moscow; CHERNEV, Kh., TODOROV, P. T., Institute of Nuclear Physics, Bulgarian Academy of Sciences, Sofia; AZIMOV, S. A., et al, Institute of Nuclear Physics, Academy of Sciences, Uzbek SSR, Tashkent; CHADRAA, V., SHARKHI, D., TUVDENDORZH, D., Institute of Physics and Mathematics, Mongolian Academy of Sciences, Ulan-Bator

"General Characteristics of Pion-Nucleon Interactions in a Nuclear Emulsion at Energies of 45 and 60 Gigaelectron-Volts"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, No 9, 1970, pp 1934-1937

Abstract: In the paper are presented the general characteristics of ion-nucleon interactions in nuclear emulsions irradiated on the accelerator in Serpukhov. The preliminary experimental data, obtained in various groups coordinated by the

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USSR

ANZON, Z. V., et al, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, No 9, 1970, pp 1934-1937

Photoemulsion Committee of the Joint Institute of Nuclear Research, were presented simultaneously to the International Conference on the Physics of Elementary Particles in Lund and at the 11th International Conference on Cosmic Rays in Budapest. In the present paper are presented results obtained on the basis of extensive statistical material. Approximately 1500  $\pi$ -N-interactions at energies of 60 and 45 gigaelectron-volts are analyzed. The free paths of inelastic interaction are  $43.7 \pm 0.5$  and  $42.8 \pm 1.2$  cm long respectively. The average multiplicity for  $\pi$ -p-interactions at 60 gigaelectron-volts equals  $6.4 \pm 0.3$ . 4 figures, 6 bibliographic entries.

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USSR

UDC 51.330.115

AOCHNEV, I. V. YAMPOL'SKIY, V. Z.

"Solution of Problem of Optimization of Structural Parameters of Complex Queueing Systems"

Kibernetika i Vuz. [Cybernetics and the University -- Collection of Works], No. 3, Tomsk University Press, 1970, pp 86-96 (Translated from Referativnyy Zhurnal Kibernetika, No. 4, April, 1971, Abstract No. 4 V598).

No Abstract.

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USSR

UDC 534.2

APANASENKOV, V. A., NEFEDOV, P. M., SHAROMOV, I. P.

"Study of Fluctuations of Propagation Velocity of Sound in the Region of the Frontal Zone"

Tr. Sakhalin. Kompleks. NII [Works of Sakhalin Combined Scientific Research Institute], No 28, 1972, pp 25-31, (Translated from Referativnyy Zhurnal, Mekhanika, No 11, 1972, Abstract No 11 B290 by N. K. Ivanov-Shits).

Translation: The Sakhalin Institute has measured the propagation times of a pulse signal in the surface layer of the ocean. The time of arrival of the leading edges (rays traveling through the mass of the ocean) and trailing edges (surface rays) of the signal were recorded. The fluctuations in travel time ( $\Delta t^2$ ) were calculated for these cases. It was shown that for the leading edge, this quantity is practically independent of distance, while there is a linear relationship for the trailing edge between  $\Delta t^2$  and distance (up to 100 km). This agrees with the assumption made concerning the path of the rays. An estimate is given for the mean horizontal heterogeneity, equal to 4 km.

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USSR

UDC 532.74

DERYAGAN, B. V., Corresponding Member Academy of Sciences USSR, AORIN, Z. M., LAPUTINA, I. P., RABINOVICH, YA. I., and CHURAYEV, N. V., Institute of Physical Chemistry, Academy of Sciences USSR, and Institute of the Geology of Ore Occurrences, Petrography, Mineralogy and Geochemistry, Academy of Sciences USSR, Moscow

"A Study of the Composition of Modified Water by Means of an Electron Probe"

Moscow, Doklady Akademii Nauk SSSR, Vol 209, No 1, 1973, pp 101-104

Abstract: Samples of modified  $H_2O$  that were obtained by condensation of  $H_2O$  vapor in quartz, capillaries, on quartz powder, or on plane quartz surfaces were subjected to analysis by means of an electron probe. The content of non-volatile extraneous substances was determined that were isolated by evaporation of the modified  $H_2O$  on a Cr surface. The modified  $H_2O$  contained one or several of the elements Na, C, K, Cl, S the compounds of which can form true solutions. In cases in which these elements were absent, the modified  $H_2O$  contained a sol or gel of silicic acid. The results indicated that the anomalous properties of modified water can be explained without taking recourse

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USSR

DERYAGIN, B. V., et al, Doklady Akademii Nauk SSSR, Vol 209, No 1, 1973, pp 101-104

to the hypothesis of formation of polymeric  $H_2O$  on quartz surfaces, which was advanced before the presence of impurities in the water in question had been established. To arrive at a definite solution of the problem of a quantitative explanation of the properties of modified  $H_2O$ , the molecular composition of modified water will have to be investigated. It has been established that  $H_2O$  introduced in the liquid state into capillaries did not show a raised content of Si or Na. The raised content of these elements in modified  $H_2O$  can be explained by a higher solution capacity of freshly condensed  $H_2O$ . The authors thank I. I. Belyayeva, V. V. Berezkin, B. V. Zheleznyy, N. N. Zakhavayeva, A. I. Izmaylova, V. V. Karasev, D. S. Lychnikov, M. A. Prusakov, V. Kh. Simonova, V. D. Sobolev, and Ye. N. Khromova for preparing samples and assisting in the experiments.

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USSR

UDC 613.68-07:612.13

APANASENKO, G. L., Leningrad

"Type of Circulatory Self-Regulation and Its Changes Among Seamen in Response to Sailing"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 7, 1973, pp 38-40

Abstract: Hemodynamic studies were conducted on 42 seamen prior to cruising in the tropics and subtropics and 2-4, 15, and 40 days after returning to port in order to determine the changes in type of circulatory self regulation. Seamen experienced heightened diastolic pressure and vascular peripheral resistance coupled with reduced lateral and terminal systolic pressure, heart beat volume, and circulatory rate. Circulatory functions were not restored completely by the 40th day. While 24, 10, and 8 seamen experienced central, cardiac, and vascular self-regulation prior to sailing respectively, on returning from the cruise self-regulation was central for 11, cardiac for 3, and vascular for 28 seamen, with the original proportions restored somewhat by the 40th day. Changes probably resulted primarily from higher temperature and humidity and limited motor activity. Such changes and the long restoration period are considered potentially dangerous to health.

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USSR

UDC 621.375.82

APANASEVICH, P. A., AFANAS'YEV, A. A.

"Interaction of Light Fluxes in Resonant Media"

V sb. Nelineyn. protsessy v optike (Nonlinear Processes in Optics--collection of works), Vyp. 2, Novosibirsk, 1972, pp 123-129 (from RZh-Fizika, No 12, Dec 72, Abstract No 12D855)

Translation: A theoretical study was made of the forced four-wave process in an isotropic medium excited by two plane strong and weak waves similar with respect to frequency at an angle of  $\theta$  to each other. The variation in power of the strong wave during the dispersion process is not considered. The increment of the weak wave is found as a function of  $\theta$ . It is demonstrated that there is a maximum increment for a defined angle with a given power of the strong beam. A study was made of the effect of the resonance saturation by the strong beam on the magnitude of the optimal angle. The effect of the improper absorption on the amplification conditions of the weak wave is investigated. The bibliography has 9 entries.

1/1

Optics & Spectroscopy

USSR

APANASEVICH, P. A.; AFANAS'YEV, A. A.

"Four-Photon Induced Raman Emission in Resonant Media"

Leningrad, Optika i Spektroskopiya; August, 1972; pp 300-7

ABSTRACT: The authors studied four-photon Raman emission during the propagation of a quasi-stationary current in a resonant medium. In the vicinity of a constant, strong field small increases of the weak waves were found in cases in which the interacting waves differed in frequency and (or) direction of propagation. The authors determined the angles and frequencies for which induced Raman emission is the most distinct. It was shown that in the case in which a strong field consists of several waves the increase in the weak current appears as the sum of the contributions of all of the strong waves and their pairs; however, these contributions do not depend on the phase of the interacting waves.

The article includes 29 equations and two figures. There are 21 references.  
1/1

1/2 042 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--EFFECT OF TWO PHOTON TRANSITIONS ON THE FREQUENCY AND THRESHOLD OF  
TWO FREQUENCY GENERATION -U-  
AUTHOR-(03)-APANASEVICH, P.A., BANKOVSKIY, A.S., KARAMALYEV, R.A.  
COUNTRY OF INFO--USSR  
SOURCE--ZHURNAL PRIKLADNOI SPEKTROSKOPII, VOL. 12, MAR. 1970, P. 419-424  
DATE PUBLISHED----MAR 70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--LASER RADIATION, LASER POWER OUTPUT, LINE BROADENING,  
FREQUENCY CHARACTERISTIC, LINE SPLITTING  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1989/1025 STEP NO--UR/0368/70/012/000/0419/0424  
CIRC ACCESSION NO--AP0107539  
UNCLASSIFIED

2/2 042

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0107539

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CALCULATION OF THE FREQUENCY AND THRESHOLD OF TWO FREQUENCY GENERATION IN MEDIA WITH HOMOGENEOUS AND INHOMOGENEOUS LINE BROADENING, ON THE BASIS OF THE EXACT SOLUTION TO THE PROBLEM OF THE EFFECT OF LASER RADIATION IN ONE CHANNEL ON THE AMPLIFICATION FACTOR IN ANOTHER. THE CONDITIONS UNDER WHICH GENERATION IN THE SECOND CHANNEL OCCURS AT THE CENTER FREQUENCY ARE DETERMINED. IN THE PRESENCE OF A FAIRLY HIGH POWER OUTPUT IN THE FIRST CHANNEL, GENERATION IN THE SECOND CHANNEL NEAR THE THRESHOLD MUST CONSIST OF TWO COMPONENTS, THE FREQUENCIES OF WHICH ARE DISPLACED FROM THE CENTER OF THE AMPLIFICATION LINE. IT IS SHOWN THAT SPLITTING OF THE AMPLIFICATION LINE UNDER THE ACTION OF THE RADIATION LEADS TO AN INCREASE IN THE THRESHOLD OF TWO FREQUENCY GENERATION IN COMPARISON WITH THE THRESHOLD CALCULATED WITHOUT TAKING TWO PHOTON TRANSITIONS INTO ACCOUNT. INHOMOGENEOUS LINE BROADENING CONSIDERABLY ATTENUATES THIS EFFECT.

UNCLASSIFIED



1/2 024 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--NONLINEAR POLARIZATION UNDER THE ACTION OF RESONANT  
NONMONOCHROMATIC RADIATION -U-  
AUTHOR--APANASEVICH, P.A. *A*  
COUNTRY OF INFO--USSR  
SOURCE--ZHURNAL PRIKLADNOI SPEKTROSKOPII, VOL. 12, FEB. 1970, P. 231-238  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATHEMATICAL SCIENCES, PHYSICS  
TOPIC TAGS--LAPLACE TRANSFORM, PERTURBATION THEORY, SPECTROSCOPY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FAME--1989/0914 STEP NO--UR/0368/70/012/000/0231/0238  
CIRC ACCESSION NO--AP0107443  
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0107443

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANALYSIS OF THE INFLUENCE OF CORRELATIONS BETWEEN FIELD FLUCTUATIONS AND THE MOTION OF QUANTA SYSTEMS ON THE NONLINEAR POLARIZATION, SUSCEPTIBILITY, AND GAIN OF THE ACTIVE MEDIUM. THE LAPLACE TRANSFORM METHOD IS USED TO OBTAIN A STEADY STATE SOLUTION OF THE PROBLEM CONCERNING THE ACTION OF RESONANT NONMONOCHROMATIC RADIATION ON A QUANTUM SYSTEM. THE SOLUTION IS IN THE FORM OF A SERIES FEATRUING BETTER CONVERGENCE THAN THE CORRESPONDING SOLUTION OBTAINED IN THE FRAMEWORK OF THE USUAL PERTURBATION THEORY. GENERAL EXPRESSIONS ARE DERIVED FOR THE NONLINEAR POLARIZATION, SUSCEPTIBILITY, AND GAIN OF THE MEDIUM. THE EFFECTS OF FLUCTUATIONS IN ENERGY LEVEL POPULATIONS, INDUCED BY DIFFERENCE FREQUENCY RADIATION, ARE ANALYZED.

UNCLASSIFIED

USSR

APANASEVICH, P. A., AFANAS'YEV, A. A. et al

"Peculiarities of Induced Combination Scattering in the Resonator of a Laser"

Minsk, Zhurnal Prikladnoy Spektroskopii, Feb 72, pp 256-261

ABSTRACT: Experiments were conducted on the induced combination scattering by benzene, with respect to energy and time, in the resonator of a laser as a function of the thickness of the scattering medium and the length of the resonator. It is shown that the induced combination scattering exercises a significant effect on the operation of a master laser, manifested in a strong deformation of the shape of the pulses, dividing a single pulse into several pulses and increasing the time of oscillation. The maximum coefficient of energy conversion to the first Stokes component reached 20%; in the second it did not exceed 2%. There were no components of induced combination scattering of a higher order.

The article includes 4 figures. There are 5 references.

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USSR

UDC 621.375.82

APANASEVICH, P. A., AFANAS'YEV, A. A.

"Interaction of Light Fluxes in Resonant Media"

V sb. Nelineyn. protsessy v optike (Nonlinear Processes in Optics--collection of works), Vyp. 2, Novosibirsk, 1972, pp 123-129 (from RZh-Fizika, No 12, Dec 72, Abstract No 12D855)

Translation: A theoretical study was made of the forced four-wave process in an isotropic medium excited by two plane strong and weak waves similar with respect to frequency at an angle of  $\theta$  to each other. The variation in power of the strong wave during the dispersion process is not considered. The increment of the weak wave is found as a function of  $\theta$ . It is demonstrated that there is a maximum increment for a defined angle with a given power of the strong beam. A study was made of the effect of the resonance saturation by the strong beam on the magnitude of the optimal angle. The effect of the improper absorption on the amplification conditions of the weak wave is investigated. The bibliography has 9 entries.

1/1

USSR

UDC 576.852.23.097.29.07

APANASHCHENKO, N. I., FILIPPOVA, L. M., and KHEBNIKOVA, N. N., Institute of Epidemiology and Microbiology imeni Gamaleya and Moscow Institute of Epidemiology and Microbiology

"Study of Diphtheria Toxins and Toxoids by Disk Electrophoresis in Polyacrylamide Gel"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 9, 1971, pp 37-42

Abstract: Study of 24 purified diphtheria toxins and toxoids prepared by the reactor and stationary methods showed that the toxoids are electrophoretically more mobile than the toxins and the toxoids obtained by the reactor method are more heterogeneous (they contain 7 or 8 fractions) than those obtained by the stationary method (4 to 6 fractions). To determine which of the fractions detected in polyacrylamide gel is the cellular component of diphtheria toxoid and which is the toxic component, purified stationary toxoid was separated by gel filtration on Sephadex G-200 into its cellular (precipitating with antibacterial serum) and toxic (flocculent) components. The cellular antigen in polyacrylamide gel divided into two fractions. The more pronounced one had less electrophoretic mobility and was located at the cathode end of the electrophorogram

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USSR

APANASHCHENKO, N. I., et al., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 9, 1971, pp 37-42

(cellular antigen), while the other fraction was barely perceptible but possessed greater electrophoretic mobility and was located at the anode end. The toxic component separated into four fractions: two of them, the more massive, were located in the center and closer to the anode end; the other two, barely perceptible, were located as in the microbial component.

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- 10 -

APANASYUK, O.N.

SPRS 56,499  
14 JULY 72

12

The sources of physiologic signals for the APL system are a complex of sensors with amplifying apparatus and other devices constituting the system for the collection of medical information. Since all the physiologic signals are processed parallel with the processed information on a magnetic recording, the latter can serve as an auxiliary source of information during repeated analysis in the absence of the patient. In addition, some of the data is fed from the measuring instruments of the life support system. Using portable data recorders.

Prolonged space flight, investigations of a scientific and training nature, and other types of studies when conditions when man is subjected to the influence of external factors, are impossible without a reliable system of recording, storing, and processing high operational concentration and accuracy in the diagnosis of health and performance of space crew. The development of such a system is inseparably related to the creation of a system for the automated processing of biologic information (APLI). This report gives some results of the practical application of the basic principles in the development of an APLI system based on an M20-A electronic computer. In addition to this electronic computer, the APLI system includes a device for coupling the information sources to the computer at the input and for coupling the computer at the output with devices for the printout and representation of the processed information, and also devices for the preliminary processing of physiologic signals (SPB) ensuring the compression of information prior to computer input or input into a magnetic recorder.

Article by O. N. Apansyuk, I. S. Chertukhin and I. V. Poley; Moscow, Akad. Nats. Tsent. Kosmicheskoy Meditsiny i Biologii, (Current Problems in Space Biology and Medicine), Moscow, 1971, pp 16-19/

Antibiotics

USSR

UDC 576.851.45.097.2.095.18:615.33

APARIN, G. P.

"Effect of Antibiotics on *P. pestis* Antigens"

Moscow, Antibiotiki, No 8, 1973, pp 728-731

Abstract: Treatment of several *p. pestis* strains (2721, 2264, 5501) with  $10^3$   $\gamma$ /ml of some antibiotics commonly used in plague therapy (streptomycin, monomycin, neomycin, tetracycline, and oxytetracycline) did not significantly alter the antigen pattern of the strains in the diffusion precipitation reaction in agar. Nor did the antibiotics destroy the antigens in the precipitation reaction with anti-VW sera. The results were the same in reactions with specific serums against "murine" toxin and fraction I of the plague pathogen. In other experiments, streptomycin, monomycin, neomycin, tetracycline, and oxytetracycline inhibited the synthesis of fraction I and the V and W antigens of the microbe. It would appear, then, that although aminoglycoside antibiotics and antibiotics of the tetracycline series do not act on already formed antigens, they are capable of preventing the synthesis of several of them.

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USSR

UDC 621.472

TEPLYAKOV, D. I., APARISI, R. R., KOLOS, YA. G., State Scientific  
Research Power Engineering Institute imeni G. M. Krzhizhanovskiy

"The Influence of Central Shading and Longitudinal Defocusing  
of a Receiver Upon the Power Characteristics of a Paraboloid  
Solar Energy Installation"

Tashkent, Geliotekhnika, No 5, 1970, pp 8-14

Abstract: Central shading of the concentrator of a solar energy  
installation by an opaque receiver is frequently accompanied by  
a shift of the ray-receiving surfaces of the receiver along the  
optical axis of the paraboloid, i.e., by longitudinal defocusing.  
The article deals with the influence of shading of the central  
part of the solar irradiation concentrator upon the distribution  
of the heat load of the receiver light-absorbing surfaces. 3  
figures, 5 bibliographic entries.

1/1

1/2 023 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--THE CLINICAL PICTURE AND DIFFERENTIAL DIAGNOSIS OF SPINAL STROKES  
-U-  
AUTHOR--(03)-SUBBOTIN, A.V., KOVALENKO, V.N., APASOVA, N.A.  
COUNTRY OF INFO--USSR  
SOURCE--ZHURNAL NEVROPATOLOGII I PSIKHIATRII IMENI S. S. KORSAKOVA, 1970,  
VOL 70, NR 6, PP 824-828  
DATE PUBLISHED--70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--SPINAL CORD, BLOOD CIRCULATION, HEMORRHAGE, ATHEROSCLEROSIS,  
HYPERTENSION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3001/0911 STEP NO--UR/0246/70/070/006/0824/0828  
CIRC ACCESSION NO--AP0126570  
UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0126570

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STUDY CONCERNS A CLINICAL ANALYSIS OF 20 PATIENTS WITH DISORDERS OF SPINAL CIRCULATION. THE DISORDER MORE FREQUENTLY OCCURS IN PEOPLE OLDER THAN 40. AMONG THE ETIOLOGICAL FACTORS A BIG SIGNIFICANCE IS ATTACHED TO THE SIMULTANEOUS INFLUENCE OF SEVERAL FACTORS (SPINAL OSTECHONDROSIS, ATHEROSCLEROSIS, HYPERTENSIVE DISEASE, MYXEDEMA, LIGHT SPINAL TRAUMAS), ONE OF WHICH IS THE MAIN, I.E. THE BACKGROUND ON WHICH THE DISORDER APPEARS. THE OTHER FACTORS MAY SERVE AS PRECIPITATING ONES IN CERTAIN PATHOLOGICAL CONDITIONS. THE AUTHORS STRESS THE POSSIBILITY OF DEVELOPING A SPINAL STROKE WITH THE SYNDROME OF BROWN SEQUARD. THE DIAGNOSIS OF DISTURBED SPINAL CIRCULATION IS A VERY RESPONSIBLE ONE AND REQUIRES A THOROUGH CLINICAL ANALYSIS OF EACH CASE WITH THE USE OF SPECIAL METHODS OF DIAGNOSIS AND FOLLOW UP STUDIES. FACILITY: KEMEROVSKOGO MEDITSINSKOGO INSTITUTA.

USSR

AMBARTSUMYAN, R. V., ~~APATIN, V. M.~~ and LETOKHOV, V. S.

"Selective Laser Excitation of High Oscillating Levels of HCl Molecules"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 15, No 6,  
20 Mar 72, pp 336-339

Abstract: This article reports the first successful experiments in direct, selective laser excitation of the third oscillating level of the HCl molecule ( $E_{ex} = 1.04$  eV) with absorption of the laser radiation at the second oscillating overtone of the molecule. The extremely high selectivity of this process allowed molecules with predetermined isotopic composition to be excited. The experiment consisted in selective optical pumping of the HCl molecule in the oscillating band  $v = 0 \rightarrow v = 3$  by the radiation of a powerful laser with frequency tuned to the near IR area and detection of the excited molecules by means of their IR luminescence in the oscillating transitions  $v = 3 \rightarrow v = 2$  and  $v = 2 \rightarrow v = 1$ . The dependence of the luminescence intensity-pumping intensity ratio on pumping wavelength was measured. This method of selective excitation of higher oscillating levels of HCl molecules of predetermined isotopic composition allows selective chemical reaction of molecules having excess oscillating energy of about 1 eV with other atoms and  
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USSR

AMBARTSUMYAN, R. V., et al., Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 15, No 6, 20 Mar 72, pp 336-339

molecules, as well as selective photodissociation of excited molecules, the red boundary of photoabsorption of which is shifted by  $8,000-9,000 \text{ cm}^{-1}$ .

2/2

- 16 -

1/2 022 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--ON THE NATURE OF THE CHI CARBIDE -U-  
AUTHOR-(02)-DEYCH, I.S., APAYEV, B.A. A  
COUNTRY OF INFO--USSR  
SOURCE--FIZIKA METALLOV I METALLOVEDENIE, APR. 1970, 29, (4), 829-833  
DATE PUBLISHED----APR70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--CARBIDE PHASE, CARBON STEEL, COLD WORKING, CURIE POINT,  
PEARLITE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3003/0360 STEP NO--UR/0126/70/029/004/0829/0833  
CIRC ACCESSION NO--AP0129592  
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0129592

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE NATURE OF A CARBIDE (THE SUBX PHASE) FORMED IN C STEELS WITH THE STRUCTURE OF LAMELLAR PEARLITE AS A RESULT OF COLD WORKING IS DISCUSSED IN THE LIGHT OF THE LATEST THEORETICAL AND EXPERIMENTAL DATA. THE MOST PROBABLE FORMULA FOR THIS CARBIDE IS  $Fe_{0.8}C_{0.2}$ ; IT IS IN NO WAY A FORM OF 'DEFECTIVE CEMENTITE', BUT AN INDEPENDENT PHASE, IDENTICAL WITH THE SYNTHETIC TYPE OF SUBX CARBIDE AS REGARDS CURIE POINT AND TEMP. RANGE OF EXISTENCE.

UNCLASSIFIED

USSR

UDC 534.121.2:661.7

APEL'TSIN, I. E., KARELIN, F. N., LISHNEVSKIY, V. A., DUBYAGA, V. P.,  
PEREPECHKIN, L. P., MIRONOVA, L. V., and ZAYCHUKOVA, N. A.

"Acetylcellulose Membranes for Desalination of Water by Hyperfiltration"

Moscow, Vodosnabzheniye i Sanitarnaya Teknika, No 6, 1971, pp 18-19

Abstract: Three types of membranes are reported suitable for water desalination. One prepared from an acetone solution of acetylcellulose "Etrol B" with a small quantity of water and magnesium perchlorate was deposited on glass at  $-12^{\circ}\text{C}$ , kept in air for 3.5 min, the membrane was separated from glass and kept in water at  $80^{\circ}$  for 70 min. Such a membrane gave a 84-88% desalination with  $500 \text{ l/m}^2\cdot\text{day}$  of water passage at 50 atm pressure. Using the same "Etrol B" acetyl cellulose in acetone and formamide, the membrane was formed on glass at  $18^{\circ}\text{C}$ , then treated at  $80^{\circ}\text{C}$  for 30 min. This membrane gave a 83-85% desalination with  $800 \text{ l/m}^2\cdot\text{day}$  passage capacity at 50 atm pressure. Acetyl cellulose membranes prepared from acetic acid solution containing triethanolamine acetate and sulfate admixtures gave a 90-91% desalination with  $300 \text{ l/m}^2\cdot\text{day}$  passage of water at 65 atm pressure.

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1/2 033 UNCLASSIFIED PROCESSING DATE--11SEP70  
TITLE--THE ROAD INTO THE FUTURE -U-  
AUTHOR--APENCHENKO, YU. A  
COUNTRY OF INFO--USSR  
SOURCE--PRAVDA, JUNE 3, 1970, P 3, COLS 1-6  
DATE PUBLISHED--03JUN70  
SUBJECT AREAS--SPACE TECHNOLOGY  
TOPIC TAGS--MANNED SPACECRAFT, COSMONAUT, SPACECRAFT LAUNCH  
PLATFORM/(U)COYUZ 9 MANNED SPACECRAFT  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1987/1926 STEP NO--UR/9012/70/000/000/0003/0003  
CIRC ACCESSION NO--AN0105000  
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--11SEP70

2/2 033

CIRC ACCESSION NO--AN0105000  
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE CHAIRMAN OF THE STATE COMMISSION WHICH, ON JUNE 1, APPROVED THE APPOINTMENT OF NIKOLAYEV AND SEVAST'YANOV AS CREW MEMBERS OF THE "SOYUZ 9", STATED THAT THIS FLIGHT IS A "WORK" FLIGHT AND THAT IT WILL BE "DIFFICULT, CRITICAL, AND WILL REQUIRE A GREAT DEAL OF WILL POWER AND CONCENTRATION". ELABORATING ON THIS STATEMENT, THE CHAIRMAN SAID, "IT IS NATURAL THAT EACH NEW FLIGHT IS A REPETITION OF CERTAIN ELEMENTS OF THE PRECEDING FLIGHTS. THAT'S WHAT MAKES THEM ORDINARY. HOWEVER, IT IS JUST AS NATURAL THAT EACH NEW FLIGHT IN SPACE HAS NEW MISSIONS AND IN THIS RESPECT IT IS A DIRECT EXTENSION OF THE WORK DONE BEFORE IT." A PHOTOGRAPH SHOWS THE "SOYUZ 9" ON THE LAUNCH PAD BEFORE THE BLAST OFF.

UNCLASSIFIED

APENOVA, N. N.

JPRS 55320  
/ MAR 70

UDC: 616.36-089.873-07:616.76-003,  
93-02:615.277.4:582.825.123

MECHANISM OF ACTION OF AFLATOXIN ON REGENERATED HYPERTROPHIC LIVER FOLLOWING  
PARTIAL HEPATECTOMY

(Article by A.A. Pokrovsky, L.A. Nikolayeva, N.V. Lushneva, L.M. Gerasimov,  
A.I. Shcherbakova, N.A. Korovin, B.M. Ananova, Institute of Nutrition, USSR  
Academy of Medical Sciences, Moscow; Moscow, Vsesoyuznyi Meditsinskikh  
Nauchnyy Tsentr, Russian, No. 1, 1972, pp 48-56)

Present conceptions about the mechanism of action of aflatoxins (a group of highly toxic hepatocarcinogenic metabolites of some species of mold fungus) are reflected in several surveys (Wogan, 1968; Raes, A.A. Pokrovsky, N.V. Lushneva et al., 1972) and experimental articles (Clifford and Raes, 1967; King and Nicholson). To date extensive factual material has been accumulated which suggests that one of the mechanisms of toxic action of aflatoxins (hepatogenic lesion to the liver, on the one hand, and marked hepatocarcinogenic effect, on the other) consists of interaction between aflatoxins and liver cell RNA (Clifford and Raes, 1969). It was shown that aflatoxin, like actinomycin D, forms complexes with the DNA molecule through attachment to adenine and guanine amino groups, so that the pentose-phosphate groups remain unaffected. Such interaction leads to impairment of the transcription process (Luttrell and Freyschmidt), i.e. to impairment of DNA-dependent RNA synthesis. The consequence of this disturbance is inhibition of DNA- and RNA-polymerase synthesis which, in turn, is associated with rapid and visible depletion of hepatic RNA and DNA synthesis. The latter is demonstrable in particular in the case of a regenerated hypertrophic liver (Demichoudis et al., 1975, 1968).

Such authors observed injury to the ribosomal system, consisting of breakdown of polyosomes and change in their profile (Peng and Wogan, 1968). For this reason one would have expected aflatoxin to suppress protein synthesis. This was confirmed in *in vitro* experiments (Smith, Clifford and Raes, 1969). Yet *in vivo* experiments failed to demonstrate distinct changes in incorporation of labeled precursors in the rat's liver proteins following administration of aflatoxin (Shank and Wogan). In addition, it was possible to demonstrate aflatoxin-induced blocking of hormonal and substrate induction of acid enzymes (Wogan and Friedman; Peng and Wogan, 1969).

APPEYKINA M. D.

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Acc. Nr:

APC036812

PRIMARY SOURCE: Zhurnal Mikrobiologii, Epidemiologii, i  
Immunobiologii, 1970, Nr 1, pp 31-35

DYNAMICS OF DISCHARGE OF TYPHOID BACILLI IN CHRONIC CARRIERS IN  
DIFFERENT SEASONS OF THE YEAR AND ITS SIGNIFICANCE IN THE EPIDE-  
MIOLOGY OF THE DISEASE

S. R. Khomik, Ya. M. Ferdinand, G. I. Skirda, N. S. Kovaleva, N. S. Solovay, K. I. Po-  
pora, I. P. Timoshkina, M. M. Shelkovich, D. A. Pludro, Apeykina, M. D.

The feces of forty five carriers of typhoid bacillus were examined in different seasons of the year. The greatest number of bacilli was discharged from January to May (0.1 to 960 million per gm of feces were the number of bacilli found throughout the year). Therefore, the authors recommend examination of carriers to be carried out mainly during the first half of the year.

There was established no association between the seasonal distribution of the incidence of the disease and the intensity of bacterial discharge.

D. M.

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REEL/FRAME  
19721729

UNCLASSIFIED

SECTION III 501 Selective Assistance for

Facilities

Name: Institute of Biophysics, Pushchino

Description:

(U) During this quarterly reporting period, 25 new articles were identified in the Institute of Biophysics, Pushchino. On the basis of these articles, it was possible to identify 32 new personalities with the Institute. These personalities, the subjects of the articles, and the dates are given below:

Biophysics

all biophysics

Allyeva, S. A.	phosphorylation	1971 (30)
Apikayeva, G. F.	radiation effect	1970 (75)
Arlova, D. F.	radiation effect	1971 (35)
Ashpa, Ya. I.	hypoxia	1969 (37)
Bregadze, I. F.	radiation effect	1970 (72)
Burel, Ye. P.	luminescence	1970 (33)
Dmitriyeva, T. I.	radiation effect	1970 (35)
Dmitriyeva, V. A.	blood plasma	1969 (40)
Donskova, O. P.	radiation effect	1970 (37)
Dubrov, A. F.	biochemical analysis	1971 (41)
Gubelova, N. A.	muscle physiology	1971 (42)
Gumast, Ye. E.	radiation effect	1970 (35)
Ivova, M. N.	serum albumin	1971 (43)
Kamatkin, V. S.	phosphorylation	1971 (34)
Khokhlova, G. K.	muscle physiology	1971 (44)
Kinlov, A. H.	salivary gland	1970 (45)
Kiyagina, V. P.	oligonucleotide	1970 (46)
Korol, B. A.	radiation effect	1971 (47)
Koshcheva, G. N.	biochemical analysis	1971 (48)

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Kuzmina, S. V.	tissue culture	1970 (47)
Markovich, D. S.	lactate dehydrogenase	1971 (48)
Nedvedova, I. V.	radiation effect	1971 (49)
Pashkova, L. V.	phosphorylation	1971 (49)
Pronevich, L. A.	antibiotic	1970 (50)
Rodionova, H. A.	mitochondrion	1971 (51)
Shechipkin, V. N.	phosphorylation	1971 (49)
Slobeyev, Ye. M.	radiation/vibration	1970 (52)
Suykova, Z. I.	radiation effect	1970 (53)
Tsvetkov, V. D.	blood plasma	1969 (46)
Yanikhina, N. V.	lactate dehydrogenase	1971 (48)
Vilenchik, M. M.	radiation effect	1970 (53)
Zamyatin, A. A.	muscle physiology	1971 (42)

Dubrov and Koshuleva (41) are associated with the Laboratory of Cell Biophysics at the Institute. Reference 52 above is of special interest since it presents an investigation of combined stresses, i.e., radiation and vibration. In addition to the above articles, five of the twenty-five (56-58) were authored by persons already identified with the Institute of Biophysics, Pushchino. Reference 55 associates the authors of the article, L. V. Sizhenikina, V. L. Misyagina, and A. M. Kozin, with the Department of Radiobiology at the Institute.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--CHARACTERISTICS OF AUXOTROPHIC MUTANTS OF MICROCOCCUS SP. 25 -U-  
AUTHOR--APIN, A. *A*  
COUNTRY OF INFO--USSR  
SOURCE--LATV. PSR ZINAT. AKAD. VESTIS 1970, (2), 129-33  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--BACTERIA MUTATION, RADIATION INDUCED MUTATION, SERINE,  
GLYCINE, GLUTAMIC ACID, ETHYLENE, DIAMINE  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1999/0561 STEP NO--UR/0197/70/000/002/0129/0133  
CIRC ACCESSION NO--AP0122682  
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0122682

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AUXOTROPHIC MUTANTS OF MICROCOCCUS SP. 25 WERE OBTAINED BY IRRADN. WITH 38,600 ERG-SQ. MM FOLLOWED BY TREATMENT OF RESULTING PRIMARY AUXOTROPHS FIRST WITH 1:6000 ETHYLENIMINE FOR 30 MIN AND THEN WITH 28,950 ERG-MIN UV AND AGAIN WITH ETHYLENIMINE. OF THE RESULTING MUTANTS, 57-68PERCENT WERE STABLE TO 9 MONTHS STORAGE. IF THE SECOND UV TREATMENT WAS OMITTED, ONLY 14-18PERCENT WERE STABLE AFTER 9 MONTHS. MUTANTS WITH DIFFERENT NUTRITIONAL REQUIREMENTS WERE INVESTIGATED. THOSE DEFICIENT IN L PROLINE, HYDROXYPROLINE, AND L GLUTAMIC ACID WERE UNABLE TO OXIDIZE L PROLINE TO HYDROXYPROLINE. MUTANTS REQUIRING DL SERINE WERE ABLE TO CONVERT L THREONINE AND GLYCINE INTO DL SERINE. FACILITY: INST. MIKROBIOL. IM. KIRHENSTEINA, RIGA, USSR.

UNCLASSIFIED



Explosives and Explosions

USSR

UDC 542.91:547.722

NIKOLAYEVA, A. D., MATYUSHIN, YU. N., PEPEKIN, V. I., SEMIOV, V. S.,  
VULIDOROV, V. V., BULIDOROVA, T. I., and APIN, A. YA., Institute of Chemical  
Physics, Acad. Sc. USSR

"Synthesis and Study of the Detonation Properties of 3-Methyl-4-nitrofuranane"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 4, Apr 72,  
pp 955-957

Abstract: A safe and simple synthesis of 3-methyl-4-nitrofuranane (MNF) has been developed. The synthesis is based on the reaction of sodium nitrate mixed with  $HNO_3$  with a solution of metacrylic acid in dichloroethane at  $50^\circ$ . MNF can also be obtained in a 24% yield from a mixture of acetone, nitroacetone, and nitropropylene treated with a mixture of nitrogen tetroxide and nitric acid. Experimentally the thermochemical and detonational properties of MNF have been determined: heat of combustion  $\Delta H_{comb}^\circ = 400.7 \pm 0.2$  kcal/mole; enthalpy of detonation of MNF  $\Delta H_d^\circ = 24.1 \pm 0.2$  kcal/mole. The detonation velocity of MNF is  $2.1 \times 10^3$  m/sec and the density is  $1.2$  g/cm<sup>3</sup>. The detonation pressure of MNF is  $1.5 \times 10^8$  dyn/cm<sup>2</sup>. The detonation temperature of MNF is  $2.5 \times 10^3$  K. The detonation products of MNF are  $CO_2$ ,  $H_2O$ ,  $NO$ ,  $NO_2$ ,  $N_2$ ,  $H_2$ ,  $CH_4$ ,  $C_2H_4$ ,  $C_2H_2$ ,  $C_2H_6$ ,  $C_3H_8$ ,  $C_4H_{10}$ ,  $C_4H_8$ ,  $C_4H_6$ ,  $C_4H_4$ ,  $C_4H_2$ ,  $C_5H_8$ ,  $C_5H_6$ ,  $C_5H_4$ ,  $C_5H_2$ ,  $C_6H_{10}$ ,  $C_6H_8$ ,  $C_6H_6$ ,  $C_6H_4$ ,  $C_6H_2$ ,  $C_7H_{10}$ ,  $C_7H_8$ ,  $C_7H_6$ ,  $C_7H_4$ ,  $C_7H_2$ ,  $C_8H_{10}$ ,  $C_8H_8$ ,  $C_8H_6$ ,  $C_8H_4$ ,  $C_8H_2$ ,  $C_9H_{10}$ ,  $C_9H_8$ ,  $C_9H_6$ ,  $C_9H_4$ ,  $C_9H_2$ ,  $C_{10}H_{10}$ ,  $C_{10}H_8$ ,  $C_{10}H_6$ ,  $C_{10}H_4$ ,  $C_{10}H_2$ ,  $C_{11}H_{10}$ ,  $C_{11}H_8$ ,  $C_{11}H_6$ ,  $C_{11}H_4$ ,  $C_{11}H_2$ ,  $C_{12}H_{10}$ ,  $C_{12}H_8$ ,  $C_{12}H_6$ ,  $C_{12}H_4$ ,  $C_{12}H_2$ ,  $C_{13}H_{10}$ ,  $C_{13}H_8$ ,  $C_{13}H_6$ ,  $C_{13}H_4$ ,  $C_{13}H_2$ ,  $C_{14}H_{10}$ ,  $C_{14}H_8$ ,  $C_{14}H_6$ ,  $C_{14}H_4$ ,  $C_{14}H_2$ ,  $C_{15}H_{10}$ ,  $C_{15}H_8$ ,  $C_{15}H_6$ ,  $C_{15}H_4$ ,  $C_{15}H_2$ ,  $C_{16}H_{10}$ ,  $C_{16}H_8$ ,  $C_{16}H_6$ ,  $C_{16}H_4$ ,  $C_{16}H_2$ ,  $C_{17}H_{10}$ ,  $C_{17}H_8$ ,  $C_{17}H_6$ ,  $C_{17}H_4$ ,  $C_{17}H_2$ ,  $C_{18}H_{10}$ ,  $C_{18}H_8$ ,  $C_{18}H_6$ ,  $C_{18}H_4$ ,  $C_{18}H_2$ ,  $C_{19}H_{10}$ ,  $C_{19}H_8$ ,  $C_{19}H_6$ ,  $C_{19}H_4$ ,  $C_{19}H_2$ ,  $C_{20}H_{10}$ ,  $C_{20}H_8$ ,  $C_{20}H_6$ ,  $C_{20}H_4$ ,  $C_{20}H_2$ .

Explosives and Explosions

USSR

UDC 541.427.6

A  
APIN, A. YA., and DIMZA, G. V., Institute of Chemical Physics,  
Academy of Sciences USSR, Moscow, Academy of Sciences USSR

"Characteristics of the Rise in the Detonation Rate of Mixed Explosives With Increasing Charge Diameters"

Moscow, Doklady Akademii Nauk SSSR, Vol 192, No 4, 1970, pp 850-852

Abstract: The relation between the detonation rate  $D$  and the charge diameter  $d$  was determined for mixtures of polydisperse hexogen powder with a mean particle size of  $\sim 0.1$  mm and paraffin wax added in amounts of 10 - 28% with reference to the mixture in the form of a gasoline solution. On evaporation of the gasoline, the mixtures were pressed into tablets. The concentration and dispersity of hexogen was the same in every mixture, while the porosity decreased and the density increased with an increasing paraffin wax content. With an increasing paraffin content,  $D$  increased. The  $D(d)$  curves for mixtures with 10, 20, and 24% paraffin showed a lower  $D$  plateau from which  $D$  increased abruptly to a higher plateau at a certain value of  $d$  that decreased with increasing degrees of filling with paraffin. At 28% of paraffin, the lower plateau was missing;  $D$  rose  
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USSR

APIN, A. YA., et al, Moscow, Doklady Akademii Nauk SSSR, Vol 192, No 4, 1970, pp 850 - 852

directly to the 2nd plateau. The presence of two plateaus and the abrupt increase in  $D$ , which amounted to 350 - 500 m/sec, can be explained by assuming that the initial surface reaction (lower plateau) was supplemented by a homogeneous reaction of the thermal explosion type that took place within the volume of hexogen grains. The surface of hexogen in mixtures was varied by using hexogen with a grain size from 0.001 to 0.35 mm, while the degree of filling with paraffin was kept constant at 20%. With an increasing grain size, entrance into the 1st horizontal section (lower plateau) of the  $D(d)$  curve took place more slowly and the value of  $d$  at which the abrupt transfer to the 2nd plateau occurred became greater. For the mixture with hexogen particles of the grain size 0.001 mm, the lower plateau was absent and the limiting value of  $D$  (upper plateau) was reached directly, evidently because the highly disperse explosive burned rapidly. For the mixture with a hexogen grain size of 0.35 mm, transfer to a higher plateau was not yet observed at  $d = 40$  mm, the maximum value of  $d$  in the experiments described, while the mixtures

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USSR

APIN, A. YA., et al, Moscow, Doklady Akademii Nauk SSSR, Vol 192, No 4, 1970, pp 850 - 852

with intermediate grain sizes (0.1 and 0.2 mm) showed a lower plateau and a transfer from it to a higher D level. Similar relations were observed for mixtures of two explosives. In experiments with 70/30 hexogen-trotyl mixtures having the same density, but a hexogen grain size of 0.1 and 0.85 mm, respectively, while the trotyl grain size was the same (0.1 mm) in both cases, the D(d) curve for the mixture with the larger hexogen grain size showed an abrupt increase to a higher value of D, whereas this increase was absent on the D(d) curve for the other mixture. The values of D were higher for the mixture with the smaller hexogen grain size.

3/3

Coatings

USSR

UDC 669.018.95:621.357.7

RADOMYSEL'SKIY, I. D., APININSKAYA, L. M., and VERGELES, N. M., Institute of Problems of Material Science, Academy of Sciences UkrSSR

"Preparation of Composition Nickel Coatings With Mullite Additions"

Kiev, Poroshkovaya Metallurgiya, No 8, Aug 70, pp 29-34

Abstract: A study was made of the production of composition nickel coatings with different contents of filamentary mullite crystals (up to 3-5 vol %). It was established that mullite additions considerably increase the durability of nickel coatings under conditions of high-temperature oxidation. The best nickel coatings with filamentary mullite crystals were obtained in sulfates of nickel electrolytes at low pH of the solution (2-3) and temperature of 25-30°C.

1/1

USSR

APOLIONOV, V. V., BARCHUKOV, A. I., KONYUKHOV, V. K., and PROKHOROV, A. M.,  
Physics Institute imeni P. N. Lebedev, Academy of Sciences USSR

"Thermoelastic Deformation of the Surface of a Solid Under the Action of a  
Laser Beam"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 15,  
No 5, 5 Mar 72, pp 248-250

Abstract: The article describes the behavior of the surface of a solid under the action of a continuous laser beam, where the result is distortion of the surface profile through thermoelastic deformations rather than surface failure. A continuously operating unimodal CO<sub>2</sub> laser was used as the radiation source, and the target was a fused quartz disk. It was found experimentally that under the action of laser radiation there is buckling of the surface of the irradiated solid at the place where the beam strikes. The authors thank P. V. BUNKIN and the late V. I. DANILOVSKAYA for valuable discussions.

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1/2 023 UNCLASSIFIED PROCESSING DATE--02OCT70  
TITLE--CONGENITAL HYPOFERRIC ANEMIA AMENABLE TO VITAMIN B SUBS TREATMENT

-U-  
AUTHOR--(04)-IDELSON, L.I., RADZIVILOVSKAYA, E.G., LEVINA, D.A.,  
APOLLONOVA, L.A.  
COUNTRY OF INFO--USSR

SOURCE--TERAPEVTICHESKIY ARKHIV, 1970 VOL 42, NR 3, PP 103-106

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ANEMIA, VITAMINE B6, THERAPEUTICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1986/0831

STEP NO--UR/0504/70/042/003/0103/0106

CIRC ACCESSION NO--AP0102793

UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--0200770

CIRC ACCESSION NO--AP0102793

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A PATIENT WITH A SHARPLY MARKED HYPOCHROMIC ANEMIA WITH A HIGH IRON CONTENT IN THE BLOOD SERUM AND IN THE TISSUES OF THE ORGANISM IS DESCRIBED. A DISORDER OF PROTOPORPHYRIN BIOSYNTHESIS FROM COPROPORPHYRINOGEN WAS REVEALED IN THIS PATIENT. PRESCRIPTION OF VITAMIN B SUB6 AND THEN PYRIDOXALPHOSPHATE PRODUCED A GOOD THERAPEUTIC EFFECT.

UNCLASSIFIED



USSR

UDC 629.7.036:3:536.46

KUZIN, A. F., YANKOVSKIY, V. M., APOLONOV, V. L., and TALANTOV, A. V.

"Influence of the Initial Temperature Upon the Basic Combustion Characteristics of a Homogeneous Mixture in a Turbulent Stream"

Moscow, Gorennye i Vzryv--Sbornik (Combustion and Explosion--Collection of Works), Nauka, 1972, pp 337-341 (from Referativnyy Zhurnal--Aviatsionnyye i Raketnyye Dvigateli, No 2, 1973, Abstract No 2.34.34. Resume)

Translation: Data are presented of an experimental investigation of the relationship of the length of the combustion zone, the combustion time, and the rate of turbulent propagation of the flame to the temperature. The object of the investigation was a two-dimensional (turbulent) flame of a homogeneous gasoline-air mixture. The range of the investigation embraces:  $T_0 = 393-793^\circ\text{K}$ ;  $\alpha = 0.4-1.9$ ;  $Q = 30-75$  m/sec;  $C = 4.7\%$ . The experiments enabled the following to be established. 1. The mainstream temperature exerts a substantial influence upon the basic combustion characteristics. 2. As the mainstream temperature is increased, the rate of turbulent propagation of the flame increases, and the combustion time decreases, as does also the length of the combustion zone. 3. With an increase of the initial rate, the degree of influence of the initial temperature upon the combustion characteristics decreases. An

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KUZIN, A. F., Gorennye i Vzryny--Sbornik, Nauka, 1972, pp 337-341

analysis of the results of the investigation, conducted on the basis of a surface model of turbulent combustion, manifests a good correspondence between the conclusions of the theory and the experimental data. 4 figures. 5 references.

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Miscellaneous

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USSR

UDC (033.74) 669.14

VINOGRAD, M. I., KISELEVA, S. A., PAVPEROVA, I. A., APOLOVNIKOVA, L. G.,  
KOLYASHNIKOVA, R. I. and BUSHINA, E. G.

"New Standard for Metallographic Determination of Nonmetallic Inclusions  
in Steel"

Moscow, Standarty i kachestvo, No 2, Feb 72, pp 28-30

Abstract: Described is the newly announced GOST 1778-70 for the metallographic determination of impurities in metals replacing GOST 1778-62 which, in addition to other drawbacks, was inadequate to determine reliably the difference in the degree of contamination between individual heats. The need for the new standard has also been prompted by new steelmaking methods and high-purity requirements on top-grade metals. Compared to similar foreign standards, the new GOST 1778-70 features the following advantages: a scale providing strict classification of inclusions by composition and covering a wider variety, including nitrides; a x200 magnification permitting more accurate rating of impurities in pure metal than the "IK" scale in the American ASTM E-45-63; an examination area of sections for the "Sh" method adopted as  $400 \pm 50 \text{ mm}^2$  (the same area in ASTM E-45-63 is only  $200 \text{ mm}^2$ ; the standard includes measuring and calculation systems (not available on foreign standards) some of which are suitable for determining impurities in both formed and cast metals;

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VINOGRAD, M. I., et al, Standarty i kachestvo, No 2, Feb 72, pp 28-30

detailed patterns for cutting test pieces for the greatest majority of metal-lurgical items (only a few are available on foreign standards). 2 tables, 6 bibliographic references)

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USSR

UDC 615.373.03:576.8.077.34

APCSTOLI, L. A., KOROVKIN, V. P., and ENGEL'GARDT, YE. YA., Leninabad  
Regional Sanitary Epidemiological Station

"Use of Agglutinating Sera and Diagnostic Agents"

Moscow, Laboratornoye Delo, No 12, 1971, pp 748-749

Abstract: A wide assortment of agglutinating adsorbed sera is used presently by many bacteriological laboratories in studies of the antigenic structure of bacterial cultures. The sera are stored and applied according to established rules and standards. The main shortcoming of some of these methods is an incomplete use of the entire content of a given serum in an ampulla. If the entire content of the ampulla is not used after it is opened, the serum can be contaminated, change its titer, or become dried, especially in dry and hot climates. To eliminate this disadvantage, the use of pipette rubber cups to seal the opened ampulla is suggested. A small hole in the cup can be made with a hot needle for squeezing a required amount of serum from the ampulla. With this method it is possible to protect the serum from overgrowth and drying, and to use the entire content of the expensive preparation which is preserved with merthiolate or boric acid. Plastic droppers are also convenient to use for the application and storing of antigens for Vidal's reaction. Using and storing preparations by the suggested method is economical, and it eliminates unnecessary work by laboratory personnel.

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USSR

UDC 616-001.4-085.83:551.442

APOSTOLYUK, V. V., Morphological Laboratory, Hospital of the Therapeutic-Sanitary Administration, Ternopol' Oblast Health Department

"Healing of Wounds under Conditions of a Natural Biotron"

Leningrad, Vestnik Khirurgii imeni I. I. Grekova, Vol 105, No 11, Nov 70, pp 10-12

Abstract: The effect of conditions in the Krivchansk crystalline gypsum cavern on the healing of wounds was studied in experiments on rabbits. In this cavern the air temperature is 10-10.5°C throughout the year, the air velocity is 0.132 m/sec, the relative humidity is 93-99%, O<sub>2</sub> content in the air is 21.3 vol %, and the CO<sub>2</sub> content in the air is 0.045 vol.%. No pathogenic microorganisms are present. The sciatic nerves of the experimental and control animals were cut in the middle third and the wounds were sutured. In half of the experimental rabbits the wound was infected with Streptococcus pyogenes, Staphylococcus aureus, or Bacillus proteus vulgaris. Both the sterile and infected (purulent) wounds healed faster in the cave than in a vivarium outside of the cave. Healing of wounds of rabbits kept in the cave was accompanied by fewer and less severe dystrophic phenomena.

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USSR

UDC: 577.1:615.7/9

APOYAN, K. Kh.

"Shifts in Nucleic Acid Content in Organs of the Progeny of Rats Subjected to Contaminated Atmospheric Air"

Materialy Nauchn. sessii In-ta epidemiol. i gigiyeny im. N. B. Akopyana, 1970-- Sbornik (Materials of the Scientific Session of the Institute of Epidemiology and Hygiene imeni N. B. Akopyan, 1970 -- Collection of Works), Yerevan, 1970, pp 68-70 (from Referativnyy Zhurnal -- Biologicheskaya Khimiya, No 7, 10 Apr 71, Abstract No 7F2392)

Translation: DNA and RNA content was reduced in the organs of rat offsprings both of whose parents were subjected to long-term exposure to chloroprene, while an increase in these levels was noted in rat offspring for which one parent was exposed to chloroprene.

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USSR

APOYAN, K. KH.

"Biochemical Changes in Animals during an Experimental Field Study of the Embryotropic Effect of Chloroprene Synthetic Rubber Waste"

Zh. eksperiment. klinich. med. (Journal of Experimental and Clinical Medicine), 1970, 10, No 3, pp 35-42 (Armenian summary) (from RZh-Biologicheskaya Khimiya, No 2, 25 Jan 71, Abstract No 2F2119 by M. Sh.)

Translation: Data are presented on the effect which air pollution by chloroprene has on the nucleic and ascorbic acid content of various organs of pregnant rats and 20-day-old embryos.

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Coatings

USSR

UDC 621.79:539.23

ANTONOVA, Ye. A., APPEN, A. A., and ANDRUSHCHENKO, N. S., Leningrad

"Investigation of Temperature Conditions of Formation and Service of a Ni-Cr-Si-B Coating"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 5, Sep-Oct 72, pp 31-37

Abstract: The conditions of the formation of coatings using the dross method were studied for an Ni-Cr-Si-B coating. The coating, referred to IM, contained 70% Ni, 20% Cr, 5% Si, and 5% B. The optimum temperature limits were investigated along with the distribution of elements during coating formation on St. 3 and 1Kh18N9T steels. The temperature limit of stability was found to be 700°C, and the gradual resorption of the coating at higher temperatures occurs as the result of iron diffusion into the coating and vice versa.

IM coating possesses all the properties inherent in "Kolmonoy" alloys. Along with heat resistance it has high stability to mechanical and thermal shock and outdoes stellite in resistance to scoring. The addition of 0.2-0.5% sooty carbon increases coating hardness and wear resistance while the addition of up to 30% tungsten and chromium carbides has the same effect. Addition of  
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ANTONOVA, Ye. A., et al., Fizika i Khimiya Obrabotki Materialov, No 5,  
Sep-Oct 72, pp 31-37

CrB<sub>2</sub> favorably affects the coating's resistance to scoring in dry friction assemblies. Four figures, 3 tables, 10 bibliographic references.

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Acc. Nr:

AP0054379

Abstracting Service:

CHEMICAL ABST. 6-70

Ref. Code:

UR0365

114579n Glass-nichrome coatings on low-carbon and low-alloy steels. Kayalova, S. S.; Appen, A. A.; Baikova, G. V. (Inst. Khim. Silikat. im. Grebenshchikova, Leningrad, USSR). *Zashch. Metal.* 1970, 6(1), 31-6 (Russ). As the starting materials powders of silicate glasses of various compns., were used which were passed through a sieve of 1600 holes/cm<sup>2</sup>, as well as fine-dispersed metal powders with a grain size of not more than 40  $\mu$ . The coatings were applied to steel samples of steels 3, 10, 20, and 12Kh1MF by the enameling method, whereupon they were fired in an inert atm. The formation of coatings contg. various glass binders and fillers (such as, Ni, Cr, nichrome, Fe, Al, and Si) was studied. Glass-metallic coatings A-1 and A-2 were obtained which are characterized by a very much greater impact strength than conventional silicate enamels, which have a high wear resistance, which are thermally stable, as well as stable in boiling water and in a 4% NaCl soln. The coating A-2 is to be considered as being more effective; it has a wide firing range (1150-1270°) and increased chem. stability. Adding Mn and Fe oxides into the compn. of the silicate melts improves their wettability as compared to steel and nichrome, and makes it possible to prep. relatively stable suspensions of

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nichrome powders in the melt. The appearance of new max. on the ionization x-ray diffraction pattern, as taken from coating A-2, indicates the presence of chem. interaction between melt No. 2 and nichrome. Coating A-2 can be recommended for tubes and parts of the app. used in petroleum, shipbuilding, and the heat and power engineering industry. S. A. Mersol

21/2  
19831529

Acc. Nr: **0050771** — Abstracting Service:  
*AP* **0050771** — CHEMICAL ABST. 5-7c

Ref. Code:

*4R0191*

*A*

101529w Use of plastics in the Krasnoyarsk drug factory.  
Appollonov, N. P. (USSR). *Plast. Massy* 1970, (1), 59-60  
(Russ). The use of Viniplast, condensed Ftoroplast, epoxy resin  
ED-6, and polyethylene (I) in the design of drug manufg. equip-  
ment was discussed. Several plastics, e.g., Kapron, polyethylene  
2015-I, epoxy resins ED-5, E-40, and ED-6 cements were effective-  
ly used in servicing the industrial machinery. The advantages of  
using I for packaging drugs were listed. CKJR

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APRELEV, N.I.  
UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent, 1/70

241120 CONVERTING SOUND SIGNALS OF SET DURATION  
FOR ANALYSIS. Human articulation of words  
or syllables requiring spectral analysis, for the  
purpose of perfecting recognition devices for such  
sounds, is transient in nature, rendering complex  
the differentiation of the signal from the atten-  
dant noise. The proposed method of increasing dura-  
tion improves the retention of the spectral comp-  
osition once it is converted from transient to  
fixed. It can then be recorded and made use of  
on tape. The method consists of transcribing the  
sound with a time lag to another carrier. The  
recording is first made on one tape recorder  
and then transcribed, with a given interval,  
by some electrical means to two other recorders.  
From these the recording is transferred back to  
the first, on which it appears, necessarily shif-

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ted in time. Depending on the complexity of the signal, this recording can again be played on to another machine and transcribed back, as often as necessary. By this means a continuous noise signal can be produced, with superimposed on it the continued spectrum of the desired signal.  
21.9.67. as 1184001/18-24. N.I.APRELEV et alia.  
(15.8.69.) Bul.13/1.4.69. Class 42m<sup>4</sup>, 42g.  
Int.Cl. G06g, G11b.

EB

AUTHORS: Aprelev, N. I.; Dominyak, I. A.; Frid,  
B. I.

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19781440

USSR

UDC 632.95

DOVLATYAN, V. V., METSBURYAN, D. A., SENEKERIMYAN, Ya. A., APRESYAN, M. A.

"Method of Producing  $\alpha$ -oxy- or  $\alpha$ -alkoxy-  $\beta,\beta,\beta$ -trichloroethylamino Derivatives of 1, 3, 5-triazine"

USSR Author's Certificate No 265112, filed 25/12/67, published 28/04/72  
(Translated from Referativnyy Zhurnal Khimii, No 24(II), 1972, Abstract No 24N625, by T. A. B.)

Translation: Derivatives of 1, 3, 5-triazine (I) having herbicidal and fungicidal properties are produced by the reaction of 2-Cl-4,6-(NH<sub>2</sub>)<sub>2</sub>-I (II) or 2-Cl-4-RNH-6-NH<sub>2</sub>-I (R-alkyl) with CCl<sub>3</sub>CHO (III) in the presence of an alkaline catalyst in an organic solvent with boiling, with subsequent treatment with SOCl<sub>2</sub> in an organic solvent with boiling, and treatment of the reaction products with ethanol in the presence of a base with boiling of the reaction mass. Example. To 1.3 g II and 0.32 g K<sub>2</sub>CO<sub>3</sub>, with water cooling, add 9.4 g III and 20 ml CCl<sub>4</sub>, heat in a water bath six hours, separate the sediment, wash with water, dry in air, treat with boiling hexane and filter off 3.8 g 2-Cl-4,6-[CCl<sub>3</sub>CH(OH)NH]<sub>2</sub>-I m. p. >350°. To 4.81 g 2-Cl-4-EtNH-6-[CCl<sub>3</sub>-CH(OH)NH]-I in 15 ml CCl<sub>4</sub>, with water cooling, add a solution of 2 g SOCl<sub>2</sub> in 10 ml CCl<sub>4</sub>, heat in a water bath ten hours, evaporate, treat the residue

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DOVLATYAN, V. V., et al., USSR Author's Certificate No 265112, filed 25/12/67, published 28/04/72

with hexane, filter, producing 4.6 g 2-Cl-4-EtNH-6-(CCl<sub>3</sub>CHCINH)-I, m.p. 164-6°. To 16.27 g 2-Cl-4-MeNH-6-(CCl<sub>3</sub>CHCINH)-I in 5 ml ethanol, with cooling, add 3.95 g pyridine by drops, heat the reaction mass in a water bath six hours and let stand over night, evaporate, treat with water and filter off 13 g 2-Cl-4-MeNH-6-[CCl<sub>3</sub>CH(OEt)NH]-I, t. decomp. 226°.

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UDC: 51:801

APRESYAN, Yu. D.

"Semantic Transformations and Syntagmatic Filters"

Moscow, V sb. Mash. per. i prikl. lingvist. (Machine Translation and Applied Linguistics--collection of works) No 14, 1971, pp 3-42 (from RZh--Matematika, No 7, 1972, Abstract No 7V673)

Translation: The paper consists of two parts; in the first, the semantic classification of such verbal nouns as "request," "award," and "uneasiness," is made more precise. The combinability of this classification of words in terms of the Mel'chuk-Sholkovskiy lexical functions is described. The second part of the paper is devoted to the classification of limitations on the applicability of the rules of rephrasing, formulated in terms of the system mentioned. The rephrasing rules have the form of substitutions applicable to deep structures represented by trees marked off by symbols of the "Basic" language. It is shown that one cannot al-

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APRESYAN, YU. D., V sb. Mash. per. 1 prikl. lingvist., No 14, 1971,  
pp 3-42

ways uniquely determine, by using a limited set of symbols, whether or not the given substitution is applicable. But one can formulate the general principle: "The freedom of rephrasing is the greater, the less marked the rephrasing medium and the context in which the original expression is used." "Contexts are naturally considered least marked in which the original word realizes the minimum of its lexical and grammatical valences and is used in a simple, limited, affirmative, nonnegative, nonmodal proposition in an expressed inclination in the present tense and in grammatically unmarked form. The absence of any of these signs raises the markedness of the sentence." The defined hierarchy of markedness may also be specified by means of rephrasing. N. Arapova

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